



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

14

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,827	09/19/2000	Glen H. Erikson	E1047/20044	4947
7590 02/23/2004			EXAMINER	
David M Tener Esq Caesar Rivise Bernstein Cohen & Pokotilow LTD 12th Floor - 7 Penn Center 1635 Market Street Philadelphia, PA 19103-2212			CHUNDURU, SURYAPRABHA	
			ART UNIT	PAPER NUMBER
			1637	
DATE MAILED: 02/23/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/664,827	Applicant(s) ERIKSON ET AL.	
	Examiner Suryaprabha Chunduru	Art Unit 1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) 26-49 and 52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25, 50-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' response to the office action and amendment filed on January 29, 2004 has been entered.
2. Claims 1-25, 50-51 are considered for examination. Non-elected claims 26-49, and 52 are withdrawn from consideration.
3. This application is filed on September 19, 2000.

Response to Arguments

4. Applicant's response to the office action (Paper No.8) is fully considered and is found persuasive in part.

5. The following is the rejection made in the previous office action under 35 USC 102(b):

Claims 1-4, 7-9, 13-14, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by McGavin et al. (J. Mol. Graphics, Vol. 7, pages 218-232, 1989).

McGavin et al. teach a multiplex structure of claim 1, using computer graphics wherein McGavin et al. disclose a multiplex structure comprising a first, a second, a third and a fourth sequence of nucleobases wherein four strands interact specifically with each other forming a multiplex structure solely through Watson-Crick pairing (see page 226, column 1, paragraphs 2-4) in which Watson-Crick duplexes are paired specifically about a dyad axis coincident with a common long molecular axis and with major grooves in continuous and specific contact (see page 230, column 1, paragraphs 1-3, page 225, column 1, paragraph 2, column 2, paragraph 3).

With regard to claim 2, McGavin et al. teach that the multiplex structure comprises an artificial or synthetic quadruplex (see page 228, column 1, paragraphs 2-4);

Art Unit: 1637

With regard to claims 3-4, McGavin et al. teach that the multiplex structure comprises a nucleic acid (DNA and RNA) (see page 225, column 2, paragraph 3);

With regard to claims 7, 9, McGavin et al. teach the multiplex structure any one strand alternates between two strands in anti-parallel orientation (see page 220, color plate 3a and 3b, page 228, column 2, paragraphs 3-8);

With regard to claim 8, McGavin et al. teach Watson-Crick duplexes are paired specifically about a dyad axis coincident with a common long molecular axis and with major grooves in continuous and specific contact indicating major groove of first-second strand duplex is placed in the major groove of third-fourth strand duplex (see page 230, column 1, paragraphs 1-3, page 225, column 1, paragraph 2, column 2, paragraph 3);

With regard to claim 13-14, McGavin et al. teach that the multiplex structure is substantially free of Hoogsteen bonding and free of G-G quartets (see page 226, column 1, paragraph 2, column 2, paragraph 2);

With regard to claim 19, McGavin et al. teach that the multiplex structure is free of a solid support (see page 226, column 2, paragraphs 3-5).

Thus the disclosure of McGavin et al. meets the limitations in the instant claims.

Response to arguments:

With regard to the above rejection, Applicants' arguments have been fully considered and found not persuasive. Applicants argue that the prior art McGavin discloses a theoretical model for quadruplex nucleic acid sequences based on the Watson-Crick tetrads and does not teach or suggest the structures with real nucleic acids and thus McGavin is a non-enabling art. These arguments are fully considered and found not persuasive because in previous office action

Art Unit: 1637

Applicants submitted the same reference to show that the Watson-Crick base pairing is enabled by the McGavin reference. Contradictory to this, presently, Applicants argue that the prior art is non-enabling prior art. Examiner notes that one of ordinary skill in the art would rely on the McGavin reference for the structure as claimed in the instant invention because Applicants did not show any crystallographic data to show how the instantly claimed structure is formed with Watson-Crick base pairing involving more than two strands. Applicants' reference to a case law is fully considered however it is noted in MPEP 2121.04 "Pictures and drawings may be sufficiently enabling to put the public in the possession of the article pictured. Therefore, such an enabling picture may be used to reject claims to the article. However, the picture must show all the claimed structural features and how they are put together. *Jockmus v. Leviton*, 28 F.2d 812 (2d Cir. 1928). See also MPEP § 2125 for a discussion of drawings as prior art. Thus the computer graphic structure disclosed by McGavin is considered as enabling art. And hence the rejection is maintained herein.

6. With respect to the rejection made in the previous office action under 35 U.S.C. 103(a) over McGavin in view of Erikson et al., applicants arguments have been considered and the rejection is withdrawn in view of arguments.

Conclusion

Claims 5, 10-12, 15-18, 20-25 and 50-51 are free of art.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO


Art Unit: 1637

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suryaprabha Chunduru whose telephone number is 571-272-0783. The examiner can normally be reached on 8.30A.M. - 4.30P.M, Mon - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion reached on 571-272-0782. The fax phone numbers for the organization where this application or proceeding is assigned are 703872-9306 for regular communications and - for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.


Suryaprabha Chunduru
February 16, 2004


JEFFREY FREDMAN
PRIMARY EXAMINER